

[0007] Therefore, starting from DE 41 24 921 C2, it is an object of the present invention to devise a household appliance that provides improved protection of the control electronics of the user control and display unit from elevated temperatures.

[0008] This object is achieved in accordance with the present invention by a household appliance having the features of Claim 1. Advantageous embodiments and refinements of the present invention will become apparent from the following dependent claims.

[0009] One particular advantage that can be achieved with the present invention is the improvement of the protection of the control electronics of the user control and display unit from elevated temperatures.

[0010] The spatial arrangement of the user control and display unit may, in principle, be selected within wide suitable limits. Conveniently, the user control and display unit is disposed on the outer surface of the front in such a manner that it is substantially equally spaced from the lateral edges thereof with respect to the normal operating position of the household appliance.

[0011] If the household appliance according to the present invention has a body and a door, and the front includes an upper part and a lower part, the upper part being attached to or forming a unit with the body and the lower part being attached to or forming a unit with the door, and the user control and display unit being disposed on the upper part of the front, then the position of a handle mounted on the door relative to the user control and display unit, as well as the structural design thereof, may be selected within wide suitable limits. Conveniently, the handle is designed such that it gives the visual impression of an extension of the console-type user control and display unit when the door is closed. This improves the overall visual appearance of the door.

[0012] If the household appliance according to the present invention has a body and a door, and the front includes an upper part and a lower part, the upper part being attached to or forming a unit with the body and the lower part being attached to or forming a unit with the door, then, according to an advantageous refinement, the door is provided with a handle, and the user control and display device forms a unit with the handle.

[0013] In another refinement of the teaching according to the present invention, the user control and display unit takes the form of a display unit having control elements. In this manner, the overall visual appearance of the user control and display unit is further improved.

[0014] In another advantageous refinement, when the door is closed, a cooling air inlet port or vapor exhaust port disposed on the body is covered by the display and user control unit in such a manner that the inlet or exhaust port cannot be visually perceived when looking in a direction perpendicular to the outer surface of the front. In this manner, the overall visual appearance is further improved.

[0015] In one particularly advantageous refinement, when the door is closed, a cooling air inlet port or vapor exhaust port disposed on the body is covered by the display and user control unit in such a manner that the air entering the inlet port and the air emerging from the exhaust port, respectively, is diverted by the display and user control unit into a predetermined direction. In this manner, the number of components is reduced.

[0016] In another particularly advantageous refinement, the user control and display unit is mounted on the front in a manner that substantially avoids heat transfer between the body and/or door and the user control and display unit. This further improves the thermal isolation of the user control and display unit, and thus of the control electronics, from the remainder of the household appliance, which heats up during the operation of the household appliance.

[0017] An exemplary embodiment of the present invention is shown in the drawings in a purely schematic way and will be described in more detail below. In the drawings,

[0018] FIG. 1 is a partial perspective view of a first exemplary embodiment of a household appliance according to the present invention;

[0019] FIG. 2 is a partial side view of the first exemplary embodiment of FIG. 1;

[0020] FIG. 3 is a partial perspective view of a second exemplary embodiment of a household appliance according to the present invention;

[0021] FIG. 4 is a partial side view of the second exemplary embodiment of FIG. 3.

electronics are located is permanently traversed by a flow of ambient air. To this end, in the present exemplary embodiment, user control and display unit 6 is mounted to the upper part of outer surface 4 of front 2 by means of mounting blocks 12 in a manner known to those skilled in the art. In this exemplary embodiment, the signal transmission link (not shown) between the control electronics located in housing 6.2 and power electronics located in the body (not shown) is provided by electrical wires running through one of mounting blocks 12. Alternatively, any other signal transmission link known to those skilled in the art could be used.

[0027] The household appliance of the present invention, therefore, provides improved protection of the control electronics of the user control and display unit from elevated temperatures.

[0028] In order to further improve this effect of the aforementioned arrangement of user control and display unit 6, which provides a permanent flow of ambient air around housing 6.2, the mounting blocks 12 of the present exemplary embodiment are designed in a manner that substantially avoids heat transfer between the upper part of front 2 and/or the body and user control and display unit 6. To this end, mounting blocks 12 are made from a material having a low thermal conductivity. Alternatively, insulating layers having a low thermal conductivity could be provided between mounting blocks 12 and user control and display unit 6 and/or the upper part of front 2. Furthermore, it is also conceivable to provide the back of user control and display unit 6, which faces the upper part, with a coating that reflects thermal radiation. Moreover, other measures known to those skilled in the art and suitable for minimizing the heat transfer between the upper part of front 2 and user control and display unit 6 may also be used, alone or in combination with each other.

[0029] In a departure from the first exemplary embodiment, it is possible that when door 8 is closed, a cooling air inlet port or vapor exhaust port disposed on the body is covered by display and user control unit 6 in such a manner that the inlet or exhaust port cannot be visually perceived when looking in a direction perpendicular to outer surface 4 of front 2.

[0030] Alternatively or additionally, it is also conceivable that when door 8 is closed, the cooling air inlet port or vapor exhaust port is covered by display and user control unit 6 in

such a manner that the air entering the inlet port and the air emerging from the exhaust port, respectively, is diverted by display and user control unit 6 into a predetermined direction.

[0031] FIGS. 3 and 4 illustrate a second exemplary embodiment of a household appliance according to the present invention. Here, in contrast to the first exemplary embodiment, user control and display unit 6 is attached to door 8 of front 2, user control and display unit 6 forming a unit with handle 10.